

Amendments to the Claims:

Please cancel claims 1-16 as presented in the underlying International Application No. PCT/DE2003/002201.

Please add new claims 17-37 as indicated in the listing of claims below.

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-16 (cancelled)

Claim 17 (new): A fuel cell comprising:

a membrane electrode assembly (MEA);

a bipolar plate having an anode-side gas distributor structure for distributing anode reactants, a cathode-side gas distributor structure for distributing cathode reactants, and a guide passage structure for distributing a cooling medium, wherein at least one of the anode-side gas distributor structure and the cathode-side gas distributor structure is divided into at least a first field and a second field, each of the first and second field having an entry port and an exit port for the reactants.

Claim 18 (new): The fuel cell as recited in claim 17, wherein an exit port of the first field is connected to an entry port of the second field.

Claim 19 (new): The fuel cell as recited in claim 18, further comprising a feed line disposed between the exit port of the first field and the entry port of the second field and configured to introduce operating substances.

Claim 20 (new): The fuel cell as recited in claim 18, wherein the operating substances include further reactants.

Claim 21 (new): The fuel cell as recited in claim 17, wherein the first and second fields each include a cooling medium entry port and a cooling medium exit port for the cooling medium.

Claim 22 (new): The fuel cell as recited in claim 21, further comprising at least one cooling medium adjustment device configured to adjust one of a flow rate and a condition of the cooling medium separately for the first and second fields.

Claim 23 (new): The fuel cell as recited in claim 21, wherein the cooling medium exit port of the first field is connected to the cooling medium entry port of the second field.

Claim 24 (new): The fuel cell as recited in claim 17, further comprising at least one reactant adjustment device configured to adjust at least one of a flow rate and a composition of the reactants separately for the first and second fields.

Claim 25 (new): The fuel cell as recited in claim 17, wherein at least one of the first and second fields has a temperature sensor.

Claim 26 (new): A method for operating a fuel cell including a bipolar plate having a guide passage structure for distributing a cooling medium, a cathode-side gas distributor structure for distributing cathode reactants, at least one of the anode-side and cathode-side gas distributors being divided into a first field and a second field, the method comprising:

- passing a reactant into an entry port of the first field and out of an exit port of the first field;

- mixing the reactant with a fresh reactant so as to form a mixture; and

- passing the mixture into the entry port of the second field.

Claim 27 (new): The method as recited in claim 26, wherein the reactant is a cathode reactant and the fresh reactant is a fresh cathode reactant.

Claim 28 (new): The method as recited in claim 26, wherein the reactant is an anode reactant and the fresh reactant is a fresh anode reactant.

Claim 29 (new): The method as recited in claim 26, wherein the first and second fields each include a cooling medium entry port and a cooling medium exit port for the cooling medium, the method further comprising:

mixing the cooling medium emerging from the cooling medium exit port of the first field with fresh cooling medium so as to form a cooling medium mixture; and
feeding the cooling medium mixture to the cooling medium entry port of the second field.

Claim 30 (new): The method as recited in claim 29, wherein the first field is operated using a first cooling medium and the second field is operating using a second cooling medium.

Claim 31 (new): The method as recited in claim 29, wherein the first cooling medium includes a different substance than the second cooling medium.

Claim 32 (new): The method as recited in claim 30, wherein the first cooling medium has at least one of a different temperature and a different flow velocity as compared to the second cooling medium.

Claim 33 (new): The method as recited in claim 26, wherein mixture has property that differs from the reactant.

Claim 34 (new): The method as recited in claim 33, wherein the property includes one of a composition and a flow rate.

Claim 35 (new): The method as recited in claim 32, further comprising:

measuring a temperature of each of the first and second fields; and
using the temperature of each field to control the fuel cell by changing a property of at least one of the reactants and the cooling medium.

Claim 36 (new): The method as recited in claim 35, wherein the property includes one of a flow rate and a composition.

Claim 37 (new): A method for operating at least a first stack of fuel cells including a first bipolar plate and a second stack of fuel cells having a second bipolar plate, each bipolar plate having a guide passage structure for distributing a cooling medium, a cathode-side gas distributor structure for distributing cathode reactants, at least one of the anode-side and cathode-side gas distributors being divided into a first field and a second field, the method comprising:

- passing a reactant into an entry port of the first field and out of an exit port of the first field;

- mixing the reactant with a fresh reactant so as to form a mixture; and

- passing the mixture into the entry port of the second field, wherein at least one of the reactant and the cooling medium is passed from the second field of the first bipolar plate to the first field of the second bipolar plate.